ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව
இலங்கைப் பரீட்சைத் திணைக்களம்
Department of Examinations, Sri Lanka

81 | E | I, II

අධ්‍යයන පොදු සහතික පත්‍ර (සාමාන්‍ය පෙළ) විභාගය, 2020
கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர)ப் பரீட்சை, 2020
General Certificate of Education (Ord. Level) Examination, 2020

කෘෂි හා ආහාර තාක්ෂණය I, II
விவசாயமும் உணவுத் தொழினுட்பவியலும் I, II
Agriculture and Food Technology I, II

පැය තුනයි
மூன்று மணித்தியாலம்
Three hours

අමතර කියවීම් කාලය - මිනිත්තු 10 යි
மேலதிக வாசிப்பு நேரம் - 10 நிமிடங்கள்
Additional Reading Time - 10 minutes

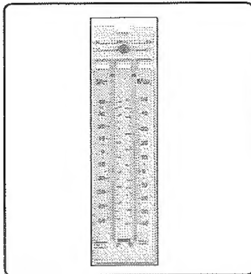
Use **additional reading time** to go through the question paper, select the questions and decide on the questions that you give priority in answering.

Agriculture and Food Technology I

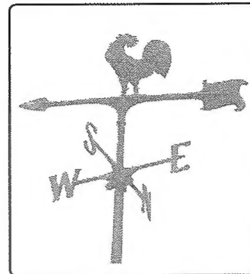
Note :
(i) *Answer* ***all*** *questions.*
(ii) *In each of the questions* **1** *to* **40**, *pick one of the alternatives* (1), (2), (3), (4) *which is* ***correct or most appropriate.***
(iii) ***Mark a cross (X) on the number corresponding to your choice in the answer sheet provided.***
(iv) *Further instructions are given on the back of the answer sheet. Read and follow them carefully.*

1. Due to the contribution of the great service for agriculture sector in Sri Lanka, the king considered as ‘God of Minneriya’ is
(1) Parakramabahu the Great. (2) Mahasen.
(3) Wasabha. (4) Agbo.

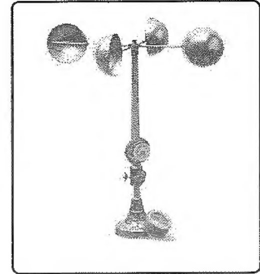
2. Out of the following equipment that are used to measure weather parameters, what is the equipment used to measure the speed of wind?


(1)


(2)



(3)


(4)

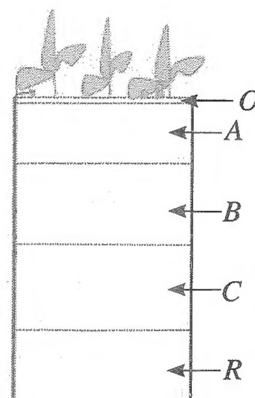
3. When light intensity is low,
(1) fruiting is enhanced in the crops brinjal, chilli, tomato etc.
(2) Ornamental plants such as begonia, ferns grow well.
(3) photosynthetic rate in cereal crops is increased.
(4) growth of tuber is enhanced in tuber crops.

4. Several factors that could be mentioned in describing the environment of a particular area are given below.
A - elevation
B - forest cover
C - soil group
Out of these, factors that affect environmental temperature are
(1) A and B only. (2) A and C only. (3) B and C only. (4) All A, B and C.

[*see page two*

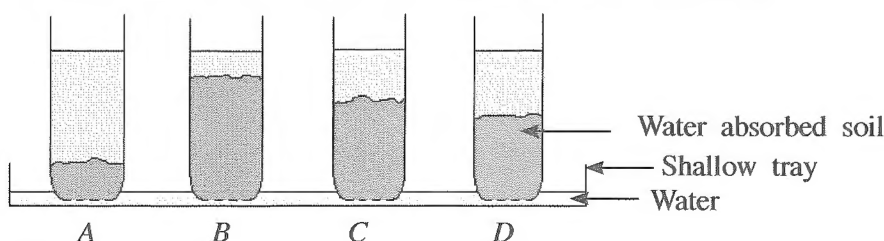
5. Soil moisture is essential for crop growth. The most suitable soil moisture level for crop cultivation is
 (1) saturation level. (2) field capacity.
 (3) temporary wilting stage. (4) permanent wilting stage.

6. Which is the correct statement regarding the typical soil profile shown in the diagram?



 (1) The zone *O* can clearly be seen in a soil which is cultivated frequently.
 (2) Agricultural activities help to form a typical soil profile.
 (3) When compared to the soil in *B* zone, the soil in *A* zone is darker in colour.
 (4) The total height of zones *A, B, C* and *R* is called soil depth.

7. This diagram depicts an apparatus made by a student using four air dried soil samples collected from different places. As shown in the diagram the soil samples are filled up to an equal level in transparent vessels with holes at the bottom. All the vessels are kept in a shallow tray filled with water. (Dark areas indicate the levels of water absorbed after one hour.)



According to the above diagram the container of soil with highest clay amount is
 (1) *A.* (2) *B.* (3) *C.* (4) *D.*

8. To make an acidic soil suitable for crop cultivation, it should be added with
 (1) organic matter. (2) gypsum. (3) sulphur. (4) calcium carbonate.

9. Which is the option that include **only** the crops belong to family Fabaceae?
 (1) Long bean, cowpea and winged bean
 (2) Pumpkin, okra and bean
 (3) Sweet potato, winged bean and bitter gourd
 (4) Kurakkan, potato and chilli

10. An equipment that could be used in inter-cultivation as well as in basic land preparation is
 (1) mould board plough. (2) mammoty.
 (3) hand fork. (4) Japanese rotary weeder.

11. Select the crop which is recommended to grow in ridge and furrow beds.
 (1) carrot (2) chilli (3) okra (4) groundnut

12. The components included in the 1:1 mixture that is recommended for vegetable nursery beds are
 (1) top soil and compost. (2) coir dust and top soil.
 (3) paddy husk and coir dust. (4) raw cow dung and top soil.

13. Which is the most efficient irrigation method that could be used to supply fertilizer, dissolved in water?
 (1) Flood irrigation (2) Ring irrigation
 (3) Drip irrigation (4) Border stripe irrigation

14. By removing excess water from the cultivating lands
 (1) soil aeration is improved.
 (2) population of anaerobic microbial population is increased.
 (3) using agricultural equipment is difficult.
 (4) subjecting of fungal diseases in plant roots is increased.

[see page three

15. The most suitable plant that can be used as green manure in crop cultivation is
(1) salvinia. (2) gliricidia. (3) guinea grass. (4) water hyasinth.

16. Select the **false** statement on macro nutrients required for plants.
(1) Plants obtain carbon from atmosphere.
(2) Plants obtain potassium and phosphorus from soil.
(3) Eppawala apatite can be applied to plants in order to supply magnesium.
(4) Legume plants fulfill their nitrogen requirement also from nitrogen in soil air.

17. The following statements are on chemical fertilizer.
A - Ammonium Sulphate is recommended to apply for the crops in wet zone in Sri Lanka.
B - Instead of applying fertilizer mixtures for the crops found in the market, buying direct fertilizer and mixing them in required amounts is more advantageous.
C - Muriate of potash is reddish brown coloured crystals.
Out of these, the correct statements are
(1) A and B only. (2) A and C only. (3) B and C only. (4) All A, B and C.

18. In crop cultivation, pre emergence weedicides are applied to the
(1) soil, before germination of weed seeds in the field.
(2) soil, when the crop seeds are being established.
(3) surface of leaves of growing weeds.
(4) surface of leaves of weeds before they produce seeds.

19. Common symptom/ symptoms of a plant that could be suspected as a viral disease is infected, is/are
(1) root rotting, wilting and leaf falling.
(2) powdery appearance on leaves.
(3) galls on stems or roots.
(4) vein clearing, yellow and light green spots on leaves.

20. Which is the row, the insect pest, the crop it attacks and the part of the plant it attacks stated correctly?

	Insect pest	Crop it attacks	Part of the plant it attacks
(1)	Cucurbit fly	Snake gourd	Fruits
(2)	Epilachna beetle	Okra	Fruits
(3)	Aulachophora beetle	Tomato	Leaves
(4)	Aphid	Paddy	Leaves

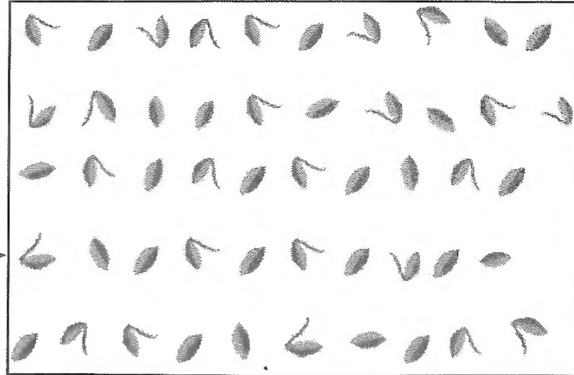
21. The first paddy variety that hybridized in Sri Lanka and introduced to cultivate is
(1) H 4. (2) Bg 379 - 2. (3) PTB 16. (4) Bw 351.

22. Which is the row with the correct standards of certified paddy seeds?

	Genetical purity	Number of maximum weed seeds in 500 grams of paddy	Minimum germination percentage	Maximum moisture percentage
(1)	80%	25	75%	11%
(2)	90%	10	80%	12%
(3)	98%	05	85%	13%
(4)	100%	02	90%	14%

[see page four

23. The diagram shows the observations received from an experiment, carried out to find out the germination percentage of paddy seeds, using 50 seeds by Ragdall method.
Accordingly, the germination percentage of these seeds is
(1) 30%.
(2) 50%.
(3) 65%.
(4) 75%.



24. Before planting shoot cuttings, a nursery keeper initially dipped the lower end of cuttings in water and then applied some white powder on the cut surfaces. This white powder may consist of
(1) calcium carbonate. (2) potassium permanganate.
(3) indole acetic acid. (4) calcium sulphate.

25. In the process of plant budding, the bud union is covered by a polythene tape. The reason for this is to,
(1) protect the scion from wind.
(2) protect the scion from sunlight.
(3) prevent damages caused by insects to the bud union.
(4) have a better contact of cambium tissues of the scion and the stock.

26. A farmer intends to grow crops under controlled environment. The permanent protected structure that he could use is
(1) simple solar propagator. (2) unit solar propagator.
(3) green house. (4) plant bed cover.

27. The following are some strategies proposed by a student on controlling temperature rise in polythene houses in low country areas in Sri Lanka.
A - fixing exhaust fans to the walls of the house.
B - spraying water as a mist in the house.
C - making the roof of the house in two levels.
D - covering the sides of the house with polythene.
Out of these, the correct strategies are
(1) A, B and C only. (2) A, B and D only.
(3) A, C and D only. (4) B, C and D only.

28. What is the correct option that shows most suitable crops for quadruple crop rotation?
(1) Paddy, kurakkan, cowpea, colocasia (2) Maize, bean, sweet potato, tomato
(3) Chilli, tomato, colocasia, manioc (4) Potato, bean, raddish, snake gourd

29. Statements regarding the effect of high rainfall on the quality of the harvest during the days just prior to harvesting are stated below.
A - The market value of paddy yields can be reduced due to discolouration.
B - The taste of fruits is increased.
C - Fruits and vegetables are easily subjected to mechanical damages.
Out of these, the correct statements are
(1) A and B only. (2) A and C only.
(3) B and C only. (4) All A, B and C.

30. What are the crop yields that could **not** be able to consume due to high content of fiber if harvesting is delayed?
(1) Mung bean and cowpea (2) Mango and tomato
(3) Okra and ridged gourd (4) Papaw and banana

[*see page five*

31. For which of the following processes that carbohydrate food are mainly required in human nutrition?
(1) Body growth of children.
(2) Supply energy for day to day activities.
(3) Protecting the body from various diseases.
(4) Repair wasting tissues of the body.

32. What is the **false** statement on food preservation?
(1) When vegetables are being blanched, the enzymes in them inactivates.
(2) Preservation of milk as yoghurt and curd is done by lactic acid fermentation.
(3) Adding over doses of chemical preservatives to food is harmful for human body.
(4) After a sterilized bottle of milk is opened for the first time, it could be kept without spoiling for about a week, under room temperature.

33. Which is the row states the preserved food and the relevant preservation method correctly?

	Preserved food	Preservation method
(1)	Dried fish	Concentration
(2)	Salted lime	Fermentation
(3)	Fruit jam	Pasteurization
(4)	Milk powder	Spray drying

34. In a poultry farm, chicks are having white diarrhoea and white faeces are found around their anus. This disease would be
(1) pullorum. (2) coccidiosis. (3) gamboro. (4) raniket.

35. A suitable litter for keeping poultry under deep litter method is,
(1) dried scrapped coconut residues. (2) coarse sand.
(3) paddy husk. (4) coir dust.

36. Out of the cattle rearing zones in Sri Lanka, the most suitable zone for rearing cattle breeds, Jersy, Ayrshire and Friesian is
(1) coconut triangle. (2) Jaffna peninsula.
(3) low country wet zone. (4) up country zone.

37. A roughage that could be given in feeding cattle is
(1) coconut poonac. (2) rice bran.
(3) silage. (4) soyabean meal.

38. Select the correct statement out of the following.
(1) The cattle breeds Sindhi and Sahival are European breeds.
(2) Animal feed with less than 25% crude fiber are known as concentrates.
(3) Sex determined chicks should be selected when buying broiler chicks.
(4) There are suitable climatic zones in Sri Lanka to rear cattle with high milk production.

39. In sensory evaluation test of a food, the sensory characters that considered are
(1) appearance, taste, smell and texture.
(2) colour, texture, price and date of expiry.
(3) appearance, taste, colour and price.
(4) colour, nutritive value, smell and date produced.

40. Some agricultural development activities which were introduced to Sri Lanka under green revolution have become a threat on human health at present. Such an activity is
(1) introducing high yielding crop varieties.
(2) introducing new agricultural equipment.
(3) cultivating both cropping seasons of the year.
(4) introducing pesticides.

**

[*see page six*

81 E I, II

අධ්‍යයන පොදු සහතික පත්‍ර (සාමාන්‍ය පෙළ) විභාගය, 2020
கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர)ப் பரீட்சை, 2020
General Certificate of Education (Ord. Level) Examination, 2020

කෘෂි හා ආහාර තාක්ෂණය I, II
விவசாயமும் உணவுத் தொழினுட்பவியலும் I, II
Agriculture and Food Technology I, II

Agriculture and Food Technology II

* *Answer five questions only, including the first question and four other selected questions.*

1. Many citizens of Sri Lanka have a tendency to grow food crops in their home gardens at present.

(i) Name separately the planting materials that should be supplied to grow the following crops.
(a) *Amaranthus* (b) Turmeric
(c) Gotukola (*Centella asiatica*) (d) Sweet potato

(ii) In home gardening,
(a) Mention **two** crops that are established in the field using nursery seedlings.
(b) Mention **two** crops that seeds are established directly in the field.

(iii) Write **two** advantages of maintaining recommended spacing in crop establishment.

(iv) (a) Mention respectively the recommended length, width and depth of a planting hole for banana cultivation in home gardening.
(b) Retarted and stunted growth with rosette appearance were observed in some plants in a banana plantation. Name this disease.

(v) Write **two** beneficial effects of soil organisms in crop cultivation.

(vi) Write **two** symptoms of nitrogen deficiency in crops.

(vii) Write **two** commonly found weeds with underground stems in home gardens.

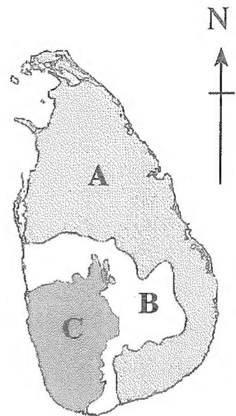
(viii) (a) Mention **two** plantation crops.
(b) Mention **two** export economic crops (export agricultural crops)
presently grown in Sri Lanka.

(ix) Write **two** cattle diseases that can be caused due to uncleanliness of the cattle shed and the cows.

(x) Write **two** preservation methods of fruits and vegetables and give **one** example for each of them.

[see page seven

2. The three climatic zones in Sri Lanka which are divided according to the amount and distribution of rainfall are shown in the diagram.



(i) (a) Name **A**, **B** and **C** zones respectively.

(b) Write the soil group that most abundant in each of the following climatic zones separately.

Zone **A**

Zone **C**

(ii) (a) Mention the unit that is used to measure rainfall.

(b) Write **two** facts that should be considered when establishing a rain gauge for taking relevant measurements.

(iii) Write **three** activities that can be taken in crop cultivation in order to prevent soil erosion occurred due to rainfall.

3. As many people tend to establish home gardens at present, producing and selling nursery plants is a profitable agricultural enterprise.

(i) (a) Write **two** advantages of adding organic manure to nursery beds.

(b) Mention **two** methods that are used to sterilize nursery beds.

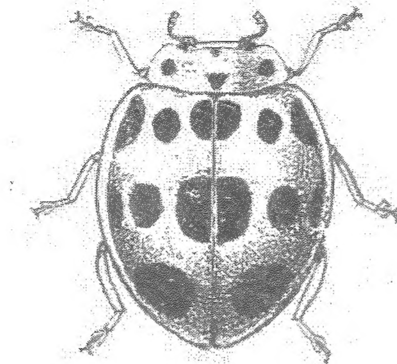
(ii) (a) Write **two** advantages of mulching nursery beds.

(b) Mention **two** materials that could be used as a mulch on nursery beds.

(iii) (a) Mention **two** important activities that should be practiced when uprooting seedlings from a nursery bed and transplanting them in the field.

(b) Name a common disease and its causative organism that infect vegetable nursery plants.

4. A main issue that farmers have to face in crop cultivation is pest damages.



(i) The insect shown in the above diagram is commonly found on leaves of brinjal plants.

(a) Write the name of this insect.

(b) What is the damage caused by this insect to brinjal cultivation?

(ii) (a) What are the stages of life cycle of an insect with a complete life cycle?

(b) Mention **two** activities that could be taken in order to minimize insect damages without applying pesticides, in a crop cultivation.

(iii) (a) Classify weeds according to their morphological characteristics and give **one** example for each of them.

(b) Give **two** common symptoms of fungal diseases in plants.

[see page eight

5. Seeds are mostly used as planting materials in crop cultivation. In addition vegetative propagation methods are also practiced.

   (i) (a) Mention **four** factors required for seed germination.

   (b) Mention **four** reasons for seed dormancy.

   (ii) Depict with a labelled diagram how to layer a shoot which **cannot** be bend to the ground level.

   (iii) (a) Mention **three** advantages of tissue culture as a vegetative propagation method.

   (b) Mention the **three** main growth stages of paddy plant.

6. Physical and chemical properties of soil, fertility and soil moisture are favourable for better growth of crops and soil hardness is adversely affect on it.

   (i) (a) Write **four** adverse effects due to soil hardness in crop cultivation.

   (b) Mention **two** power operated land preparation equipment that are suitable for loosening a soil.

   (ii) Mention **three** types of planting beds prepared for crop establishment.

   (iii) (a) Mention **four** activities that should be taken into account in fertilizer application in order to improve fertilizer efficiency in crops.

   (b) What is the advantage of cultivating legume crops in crop rotation?

7. Out of various factors that should be considered in animal husbandry, insemination of cows at the correct time and keeping day old chicks in a brooder until they adopt to the environment are important.

   (i) (a) What is the gestation period of a cow, in days?

   (b) Mention **four** heat signs of cows.

   (c) What is meant by the 'dry period' of a cow?

   (ii) (a) What is the temperature that should be maintained in a brooder for chicks during the first week of age?

   (b) In addition to the temperature, mention **two** requirements that should be supplied during the brooding period of chicks.

   (iii) Illustrate the behaviour of chicks in a brooder under high temperature, low temperature and optimum temperature with separate diagrams.

* * *